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ABSTRACT

This framework defines a vision of the knowledge, skills, and abilities that should characterize California's beginning teachers in their initial years of service. Discussion and development of the framework are part of the California New Teacher Project, a pilot study of policy alternatives to enhance the success of novice teachers. Following a description of several qualities of teaching that are part of the new vision for the profession (a developmental view, a holistic vision, and diversity of teaching in California), the framework is organized in two parts: subject matter constructs and pedagogical constructs. The essence of the framework, is a set of six domains and subdomains that represent the knowledge, skills, and abilities of California teachers: (1) demonstrating knowledge of the teacher's content area(s); (2) planning and designing instruction; (3) organizing and managing the classroom; (4) delivering instruction to all students; (5) diagnosing and evaluating student learning; and (6) participating in or creating a learning community. Each domain or subdomain is broken down into more specific constructs with examples of indicators at both beginning teacher and expert teacher levels that are intended to communicate the meaning of the constructs. (Contains 19 references.) (LL)

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**ASSESSMENT COMPONENT OF THE CALIFORNIA
NEW TEACHER PROJECT:**

**FRAMEWORK OF
KNOWLEDGE, SKILLS AND ABILITIES FOR
BEGINNING TEACHERS IN CALIFORNIA**

A WORK IN PROGRESS

FEBRUARY, 1992

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We have greatly benefitted from the review of the Framework by people working closely with beginning teachers, such as, mentor teachers and other teacher educators. These reviews have been instrumental in helping us to identify and refine indicators, especially indicators of beginning teacher competence.

This report is based upon work performed pursuant to Contract TCC-C021 with the California Interagency Task Force of the California Commission on Teacher Credentialing and the California State Department of Education New Teacher Project. The contents do not necessarily reflect the views or policies of these agencies and the accuracy of the information is the sole responsibility of the Far West Laboratory.

**Assessment Component of the
California New Teacher Project:**

**Framework of
Knowledge, Skills and Abilities for
Beginning Teachers in California**

A Work in Progress

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February, 1992

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Introduction

The purpose of this framework is to define a vision of the knowledge, skills and abilities that should characterize beginning teachers (i.e., teachers in their first or second year of teaching in their own classroom) in the future. Discussion and development of the framework is part of the California New Teacher Project, a pilot study of policy alternatives to enhance the success of beginning teachers in California. The CNTP is administered jointly by the Commission on Teacher Credentialing and the California Department of Education. The framework is being developed by the Far West Laboratory for Educational Research and Development, at the direction of the Commission and the Department. Development of the framework was initially suggested by the CNTP Advisory Panel, which represents teachers, administrators, colleges, universities, parents and local boards of education.

Revision and completion of the framework will occur as a result of critical analyses by the Advisory Panel and twelve educational institutions and professional organizations, which are also represented on the panel. Far West Laboratory (FWL) is responsible for developing the framework in consultation with these institutions and organizations. FWL will report on this process of development to the advisory panel.

The overall purpose of the framework is to enhance the success of beginning teachers in California by defining a vision of effective teaching in the initial years of service.

Following adoption of a revised framework, it would be used:

- To guide programs of support and assistance for beginning teachers, by outlining broad categories for the content of these programs.
- To serve as a primary basis for informing new teachers about strengths and weaknesses in their professional practices.
- To inform preservice teacher education programs by providing a vision of the knowledge, skills and abilities that beginning teachers are expected to learn.
- To inform programs of professional development for classroom teachers by providing a vision and specific information about teaching practices in California.
- To serve as a primary basis for a culminating assessment of new teachers during the first three years of service, for the purpose of awarding professional teaching credentials.

Operational systems and methods for accomplishing these purposes of the framework should be determined on the basis of its contents. Upon adoption, the framework should be part of the *Report of the California New Teacher Project*, which the Commission and the Department will submit to the Legislature and Governor in March, 1992. The report should also include policy recommendations for implementation of the framework.

Qualitative Aspects of a New Vision for Beginning Teachers

The draft framework of knowledge, skills and abilities for beginning teachers in California recognizes several qualities of teaching that are part of a new vision for the teaching profession. These qualities -- a developmental view of teaching, a holistic vision of teaching, and diversity of teaching in California -- are described briefly below.

Developmental View of Teaching

Any new vision of teaching must recognize that each teacher's knowledge, skills and abilities develop throughout her or his career. The dynamic qualities of teaching confirm that practitioners do not attain "completeness" in their professional expertise, perspectives or accomplishments -- something that distinguished teachers have recognized for many years. Another implication is that new teachers are not "finished" as professional learners, even though they may have been educated in distinguished institutions where they may have completed highly effective programs of undergraduate education and professional preparation. Although prior preparation is essential, and excellence in this preparation is extraordinarily important, further development throughout each teacher's period of service is also indispensable, and should be recognized in state policies related to the teaching profession.

The developmental view of teaching gives particular attention to the early years of each practitioner's period of service. Employing organizations, credentialing agencies, postsecondary institutions and professional associations must have expectations regarding professional performances that are realistic while also being appropriately challenging for entry-level practitioners. The policies and practices of these key institutions must recognize that beginning teachers are at intermediate stages of advancement and expertise in teaching, and that intensive development must occur during this phase. Some of this development occurs naturally to reflective teachers as they accumulate experience; other development relies on outside support which helps the beginning teachers understand their experience. Defining and realizing these aspects of the vision have been the central purposes of the California New Teacher Project.

Holistic Vision of Teaching

At each stage of a practitioner's career, teaching consists of decisions, practices and perspectives that are highly interrelated with each other. A vision of teaching in California classrooms must emphasize that the various aspects of a teacher's performance are not independent from each other, and therefore cannot be viewed or judged in isolation. Styles of classroom management interact with decisions made in the course of instructional planning, which are inseparable from characteristics of the curriculum and the students, which guide the teacher's assessment of student attainments. Similarly, a practitioner's use of pedagogical methods must be viewed in relation to the content and purposes of instruction. The holistic view of teaching also recognizes that instruction occurs in settings in which many contextual factors affect pedagogical decisions and practices. Overall, the practice of teaching must be seen as a "seamless fabric" in which the components are interlinked to form a teacher's style of professional practice.

The realization that teaching is a "whole fabric" must be balanced against the need to consider and discuss *aspects* of teaching in the course of reflection and dialogue. A mentor cannot assist a novice teacher by referring exclusively to the novice's "overall practice" -- some analysis of the beginner's practices is essential. Similarly, teacher educators, school administrators and staff developers are expected, for good reasons, to provide information, ideas, advice and practical applications related to specific, technical aspects of teaching, as well as considerations of fundamental issues and problems in the profession. A culminating assessment of a new teacher's performance could not be based entirely on a holistic review, but individual observations and judgments in an analytical approach must be considered in relation to each other in forming a comprehensive assessment of the individual's overall status as a professional. The holistic view of teaching is an essential feature of the vision, but the purposes of the framework could not be accomplished in the absence of analytical considerations.

Diversity of Teaching in California

The circumstances and demands of teaching vary enormously. Diversity among teachers themselves is extraordinarily important to the effectiveness of education. The framework of knowledge, skills and abilities must be conceptualized with teacher diversity as a virtue to be celebrated, rather than a problem to be solved. The vision of teaching in the beginning years, moreover, must acknowledge that entry-level professionals are heterogeneous, and that many dimensions of this heterogeneity must not be diminished through a process of homogenization.

California's remarkable students represent another dimension of diversity that confronts teachers in the 1990s. Professional educators in this state may be facing the most diverse population of students in the history of education. The framework of teacher knowledge, skills and abilities must be developed and implemented with student diversity clearly in mind. Underlying the draft framework in this document is the assumption that *beginning teachers should be expected to utilize effective pedagogical principles and practices across subject areas while teaching diverse students*. Also embedded in the framework is the premise that different teachers may be called on to utilize different aspects of effective teaching depending on the needs of their students. A framework of skills, knowledge and abilities must respect the varieties of teaching that may legitimately be created by student diversity.

Other dimensions of diversity in teaching are represented by the different curricula and other policies of the one-thousand-plus school districts in California. Although the draft framework is intended to have statewide uses and applications, these must not violate the authority of local boards of education to govern teaching and learning in ways that are appropriate for the diverse communities that make up California.

Full recognition of the diversity of teaching does not, however, conflict irreconcilably with the prospect of establishing a broad vision that could serve to guide new teachers, their employers and their mentors. Indeed, *teaching cannot aspire to the stature of a profession unless its members are guided by a common set of expectations regarding expertise, competence and performance*. Because of the diversity of teaching, these expectations must be particularly broad and flexible, which may set teaching apart from other

professions. The challenge for policymakers is to establish a framework that serves the purpose of enhancing new teacher success while fully recognizing the dimensions of diversity that characterize the teaching environment.

**Fundamental Qualities of Effective Teachers:
Preconditions to Knowledge, Skills and Abilities in the Framework**

The content of the draft framework describes the knowledge, skills and abilities that are most frequently cited as essential for beginning teachers. The framework is organized in two parts, which relate generally to subject matter constructs and pedagogical constructs. The framework as a whole, however, cannot be viewed in isolation from other qualities that characterize effective teachers. The framework assumes that these qualities -- most of which are more fundamental than subject matter competence and pedagogical expertise -- also characterize beginning teachers in California. In many instances, these fundamental qualities of effective teachers are *preconditions* for attainment and utilization of the knowledge, skills and abilities that comprise the framework.

In addition to the knowledge, skills and abilities described in the framework, the following qualities are fundamental to the success of beginning teachers:

- An undergraduate education in the arts, humanities, sciences and social sciences, and an appreciation of the contributions of the liberal arts to human civilization.
- Essential proficiency in basic academic and intellectual skills that characterize educated adults, such as the ability to read, write and reason at a baccalaureate level of proficiency.
- A broad understanding of social and cultural influences on children, families and communities, particularly the varieties of these influences in California.
- A broad comprehension of patterns of growth and development in children and adolescents, particularly changes in language, learning and thinking abilities.
- A personal ability to motivate children and adolescents, to foster their self-esteem, and to sustain their interest in important academic pursuits.
- A fundamental commitment to enable all students to attain high standards of academic and personal accomplishments.
- A personal character that represents an acceptable model for children and youth, and that contributes to their security and well-being.

The ingredients of the framework on the following pages should be interpreted with these precursor qualities in mind.

Framework of Knowledge, Skills and Abilities for Beginning Teachers in California

The essence of the framework is a set of domains and subdomains that represent, as fully as possible, the knowledge, skills and abilities that should characterize teachers in California. Each domain or subdomain is broken down into more specific constructs with examples of indicators at both beginning teacher and expert teacher levels that are intended to communicate the meaning of the constructs. These indicators are intended to illustrate the constructs, and not to define them. Expert teachers are assumed to have mastered all the beginning teacher competencies. In many cases, an expert teacher indicator represents a more complex application of a beginning teacher skill as represented in a parallel indicator, so the corresponding indicators are presented side by side. In some cases, the beginning or expert teacher indicators are presented alone, with no parallel skill portrayed.

To perform satisfactorily at the level of the domain or subdomain implies an integrated performance which blends thoughts and behaviors at the level of the more specific constructs. A single event is likely to portray several indicators, perhaps cutting across different domains or subdomains. Not all indicators, even within a construct, are likely to be able to be evaluated through a single event or performance. Anticipated uses of the constructs were outlined in the Introduction of this draft framework.

The framework proposed in this document is based on the existing literature on effective teaching, as reflected in the documents cited in the attached bibliography. This literature does not yet suggest a developmental sequence for achieving the competencies identified below. Therefore, a panel of educators who work closely with beginning teachers was convened to suggest realistic expectations for beginning teachers with respect to each construct. The work accomplished to date is only a very preliminary attempt to define these expectations. Further revisions to this framework in consultation with professional groups in California are expected, and the constructs will continue to be examined for both relevancy and completeness.

Only an exemplary teacher could fully implement all the constructs in the framework. The framework is not intended to be used as a checklist against which to "count" a new teacher's practices. To be used as a basis for self-evaluation, formative assessment, professional development or a culminating assessment, the framework would need to be expanded to include statements of acceptable and unacceptable practices and performances. These could be developed for each construct to inform awareness of strengths and weaknesses. It is likely that most teachers, even experienced teachers, will exhibit uneven levels of development across all constructs. For summative evaluations, then, it would be most important to establish a general level of acceptable performance across the entire framework, so strong performances in some domains could compensate for weaker practices in other areas.

Few differences between beginning and expert teachers can be characterized as new, discrete behaviors that are added as a teacher gains professional expertise. More often, the growth is characterized by a greater depth of understanding, simultaneous consideration of multiple factors as opposed to sequential consideration of single factors, and

decision-making with greater ease, greater accuracy, and at earlier points in time. Some skills, e.g., anticipating student errors, depend upon a repertoire of experience with particular topics or varying types of students; for these skills, most beginning teachers can only be expected to show progress in using analytic strategies and learning from the effects of specific decisions.

Subject Matter Constructs

For students to learn the subjects of the curriculum, their teachers must know and understand the subject(s) they are expected to teach. Recent curricular reforms call for students to develop higher-order thinking skills, to explore subjects in more depth than in the past, and to explore interrelationships among subjects. The success of these reforms depends on teachers having a firm grasp of content knowledge. The following constructs are necessary for teachers to implement the California Curriculum Standards, Guides and Frameworks, whose content and instructional implications should be familiar to every California teacher. These constructs can and should be mastered prior to the assumption of full-time teaching responsibilities in the area(s) of expertise, since the ability to design and implement instruction effectively draws on these competencies.

Elementary teachers, who teach multiple subjects, cannot be expected to exhibit the same depth of understanding of each subject matter as secondary teachers, who specialize in a small number of subject areas. The further revisions should include consideration of the appropriateness of developing separate constructs expected of teachers of single and multiple subjects or specifying different levels of mastery.

Domain: Demonstrating Knowledge of One's Content Area(s)

Knowledge of one's content area(s) is the key to all other subject-specific pedagogical skills. Knowledge alone, however, is not enough; a teacher must also be able to demonstrate this knowledge to the students in ways that foster student learning of content area(s) to be taught. Although the foundation of content knowledge should be acquired prior to instruction in pedagogical skills, teachers will likely broaden and deepen their knowledge of the content area(s) over time as they teach. The constructs described under this domain are those elements of content knowledge which can and should be demonstrated with respect to teaching.

DOMAIN: DEMONSTRATING KNOWLEDGE OF ONE'S CONTENT AREA(S)

Subdomain: Knowing key concepts and their interrelationships in the grade-level specific curriculum for the subject to be taught, and is able to apply these concepts in an integrated performance or demonstration

Knowledge of the content area(s) taught and particularly the ability to define, explain, and use concepts accurately is an essential foundation for all other subject-specific pedagogical skills. As will be the case for most of the indicators for subject matter subdomains, each of the indicators below is described as appropriate for both beginning and master teachers, with the differences coming in standards to be met rather than criteria to be examined. Expert teachers are likely to be more familiar than beginning teachers with the concepts as they are typically portrayed at the grade level taught. They are also likely to differ from beginning teachers in the ease with which they refer to and link concepts. Beginning teachers are more likely to require more time for reflection, e.g., in planning the presentation of concepts and principles or in responding to student questions.

*Examples of indicators of competence for both **beginning** and **expert** teachers:*

- Understands the structure of the discipline, including factual information, organizing principles, central concepts, and competing paradigms or frameworks.
- Identifies, defines, and discusses concepts in ways that are accurate (though perhaps simplified for introduction at earlier grade levels.)
- Identifies relationships among concepts in a field as well as relationships to concepts external to the discipline.
- Concretely demonstrates mastery of concepts through an integrated performance such as writing an essay or interpreting a piece of literature, solving a mathematical problem, performing a piece of music, producing a work of art, or setting up a science experiment.

DOMAIN: DEMONSTRATING KNOWLEDGE OF ONE'S CONTENT AREA(S)

Subdomain: Exhibiting a breadth of subject matter knowledge across the curriculum to be taught

The breadth of topics, especially the degree to which topics are interrelated, that can be taught under a specific credential varies considerably among credentials. Multiple subjects teachers are required to be familiar with an especially broad array of separate and distinct content areas. It is unlikely that teachers will be familiar with every topic that might be included in the curriculum covered by their teaching credential(s). However, teachers can be expected to have mastered topics most commonly taught and to be knowledgeable about a broad range of topics covered by the credential to facilitate mastery of additional topics when necessary. For example, an English teacher may never have encountered American folk tales, but can utilize his or her knowledge of major themes in American literature and techniques of literary criticism to identify significant features of the folk tales that might be taught.

*Examples of indicators of competence for both **beginning** and **expert** teachers:*

- Understands basic principles and concepts of all topics most commonly taught in the curricular area.
- Draws on one's initial knowledge to master additional topics in the discipline or related disciplines.

DOMAIN: DEMONSTRATING KNOWLEDGE OF ONE'S CONTENT AREA(S)

Subdomain: Using alternative methods of representing or communicating concepts in the subject(s) to be taught, such as the use of metaphors, symbols, models, graphs and concrete materials

The ability to accurately represent concepts and principles in multiple ways is an important foundation of skills in subject-specific instruction, particularly for responding to the varied needs of learners. Developmental differences in this subdomain are likely to be great enough that separate criteria can be applied to beginning and expert teachers.

Examples of Indicators of Beginning Teacher Competence

- Represents concepts and principles in more than one way, possibly within the same method.
- Judges the accuracy of a given specific representation of a concept.

Examples of Indicators of Expert Teacher Competence

- Represents concepts through more than one method, such as analogies, metaphors, drawings, models, concrete materials.
- Represents concepts and principles at different levels of complexity, so they are meaningful to students at varying developmental levels with respect to the discipline.
- Judges whether concepts or principles are appropriately represented, according to the level of previous understanding assumed with respect to the learner, e.g., in textbooks.

DOMAIN: DEMONSTRATING KNOWLEDGE OF ONE'S CONTENT AREA(S)

Subdomain: Identifying and responding to concrete examples in settings where discipline-based concepts are used in practice

Applied examples of the use of some concepts and/or principles are important for periodically communicating the relevance of learning the content. Some concepts and topics will lend themselves to applied examples more easily than others. The important aspect of this subdomain is that teachers have a repertoire of examples of real-world application within a content area upon which they can draw in their teaching.

*Examples of indicators of competence for both **beginning** and **expert** teachers:*

- Knows how disciplinary knowledge presented at the grade level is used in application in the community and greater society.
- Recognizes the use of disciplinary principles and constructs in different settings or environments.

DOMAIN: DEMONSTRATING KNOWLEDGE OF ONE'S CONTENT AREA(S)

Subdomain: Knowing ways of integrating ideas and information across the subject areas

This skill is not only important for illustrating linkages across content areas, but also for schoolwide implementation of an integrated curriculum. Such curricula have been used extensively at the elementary level, but are becoming increasingly used at the secondary level as well.

*Examples of indicators of competence for both **beginning** and **expert** teachers:*

- Identifies relationships among concepts in a field to concepts external to the discipline in the curriculum at the grade level.
- Knows how concepts and principles in the subject are used in application in other fields in the curriculum at the grade level.

DOMAIN: DEMONSTRATING KNOWLEDGE OF ONE'S CONTENT AREA(S)

Subdomain: Understanding how judgments are made in the discipline

Understanding the rules and procedures by which judgments are made in a content area is not only an important foundation for accurately teaching students how decisions are made in the content area, but also for judging student work.

*Examples of indicators of competence for both **beginning** and **expert** teachers:*

- Knows the rules of evidence of competing paradigms in the field which guide inquiry or exploration in the grade-level specific curriculum, and govern the acceptability of judgements and conclusions.
- Evaluates the plausibility of claims or interpretations in the field.

Pedagogical Constructs (General and Content Pedagogy)

Each construct represents a domain of teaching that is considered to be crucial for effective instruction of diverse students. As indicated earlier, however, the domains are not separate, but interdependent. For instance, planning instruction involves diagnosing and evaluating previous student learning, and drawing on resources in the particular learning community where the teacher works. Instructional plans are implemented through established classroom organization and management structures and other delivery mechanisms. The constructs are presented separately to communicate expectations for teachers and to facilitate identification of strengths and weaknesses in individual practitioners.

During teacher preparation, prospective teachers receive instruction and supervised practice with respect to each of the pedagogical constructs listed below. Nevertheless, their mastery typically requires some period of experience in full-time teaching. Elementary teachers face a particularly formidable challenge in that they must master instruction in multiple subjects, with preferred instructional approaches varying between subjects; the teaching competence of elementary teachers can be expected to vary across the content areas. In contrast to subject matter constructs, a teacher's progress toward mastery of the pedagogical constructs can be assessed only partially prior to assumption of full-time teaching responsibilities.

Domain: Planning and Designing Instruction

Planning is a skill which relies on a repertoire of experience with the curriculum, with the implementation of specific types of instructional activities, and with the relative difficulty of specific topics and concepts. It is a difficult skill for beginning teachers, because they have had limited exposure to the curriculum and limited experience with the effectiveness and length of time of various instructional activities. Accumulated experience will improve the ability of reflective beginning teachers to anticipate the time required for various activities and to anticipate the relative difficulty of specific topics and concepts. The abilities to appropriately sequence activities and to develop higher-order thinking skills are also likely to develop with experience if the beginning teacher has a solid understanding of the conceptual framework(s) embedded in the discipline(s). However, the development of the abilities to effectively build on student resources and to identify specific elements of lessons which significantly contributed to the success or failure of the lesson can be significantly enhanced with outside support.

DOMAIN: PLANNING AND DESIGNING INSTRUCTION

Subdomain: Selecting and sequencing instructional activities

Skill in selecting instructional activities consists of the ability to evaluate the appropriateness of specific activities for the time available, as well as the appropriateness for the instructional goals of the lesson, unit, grade level, and for the students taught. Sequencing instructional activities is a more difficult skill which involves anticipating the cumulative effects of activities and effecting movement to a long-range goal.

*Examples of Indicators of **Beginning** Teacher Competence*

- Designs a plan for moving students toward a learning goal which has a reasonable logic to the sequence of activities and which stretches learners to the next steps in their development.
- Distinguishes between introductory and cumulative activities.
- Recognizes and is able to articulate prior cognitive achievements of the students which affect instruction and proximal goals to strive for in subsequent lessons or units.
- Selects and adapts appropriate activities, supporting materials and resources from external sources.
- Uses supporting materials to enhance and enrich instructional units.

*Examples of Indicators of **Expert** Teacher Competence*

- Plans lessons and units that are well defined, sequenced, and coordinated with each other in terms of mastery of skills and concepts.
- Designs lessons and series of lessons that provide adequate practice to enable students to master concepts or skills.
- Effectively targets instructional and interpersonal efforts to encourage and assist students to fully utilize the resources available to them and the strengths they already possess.
- Draws upon an extensive repertoire of support and enrichment activities and materials.

DOMAIN: PLANNING AND DESIGNING INSTRUCTION

Subdomain: Building on student resources

Students vary in the intellectual resources which they bring to a lesson. These resources not only include level of mastery of the same concept in an applied context or related concepts, but also familiarity with the materials, procedures, and other concepts used within a lesson. The utilization of familiar elements, when possible, and previous learning facilitates further learning.

*Examples of Indicators of **Beginning** Teacher Competence*

- Plans activities that reflect an awareness of, and an attempt to respond to, the diverse background experiences, dispositions, understandings, and interests of students in the classroom.
- Plans reasonable activities to stretch learners to the next steps in their development.
- Has a sense of where a teacher can make a difference with respect to the children taught (e.g., a teacher cannot fully compensate for alcoholic parents, but can work on development of specific skills, both cognitive and noncognitive).

*Examples of Indicators of **Expert** Teacher Competence*

- Uses activities that display sensitivity to, and draw upon, students' diverse background experiences, dispositions, understandings, and interests.
- Plans lessons and units that build upon previous student understandings, giving particular attention to social, cultural, linguistic, and cognitive factors to validate, build on, or modify students' prior knowledge, and to stretch students beyond their own world to achieve specific goals with respect to the district curriculum and state curriculum frameworks.
- Recognizes individual and collective student strengths that can be utilized and built upon both for further learning and to compensate for weaknesses.
- Designs activities that equip students to use resources beyond the classroom and text, e.g., library, media center, community.

DOMAIN: PLANNING AND DESIGNING INSTRUCTION

Subdomain: Including higher-order thinking skills

The current California curriculum emphasizes higher-order thinking skills (e.g., comparison, analysis, evaluation) for all students. Even students who have not mastered basic skills can practice higher-order thinking skills in an appropriately designed curriculum.

*Examples of Indicators of **Beginning** Teacher Competence*

- Identifies specific developmentally-appropriate higher-order thinking skills to be developed and plans activities to teach these skills.

*Examples of Indicators of **Expert** Teacher Competence*

- Provides opportunities for students to acquire and use developmentally-appropriate and subject-matter specific higher-order thinking skills.
- Designs presentations or activities to stimulate students' interaction and/or questioning in new directions.

DOMAIN: PLANNING AND DESIGNING INSTRUCTION

Subdomain: Evaluating and adapting instructional plans

No teacher can design a plan of instruction that works exactly as anticipated. Therefore, teachers must be able to detect when their plan is not working and to try adaptations to address the emerging problems. This skill is one which is likely to require reflection on experience for improvement; therefore, differences between expert teachers and beginning teachers with respect to evaluating and adapting plans are usually large. Most beginning teachers will experience difficulty in identifying which aspect of the plan is accounting for the problems; expert teachers can effectively draw upon their accumulated experience to make likely predictions as to which aspects need modification. Expert teachers can also recognize indications of problems at an earlier stage than beginning teachers, and are better able to adapt their plan during instruction. Beginning teachers typically will need more time for reflection and thoughtful experimentation to reach the same conclusions.

*Examples of Indicators of **Beginning** Teacher Competence*

- Identifies early symptoms of difficulties during a lesson which are likely to lead to a failure to achieve lesson objectives.
- Identifies failures that occurred during a lesson, and alters planned instruction.
- Reflects on lessons previously taught and identifies lessons that went well and lessons that failed, generating alternatives for those that failed.
- After a lesson or unit is implemented, identifies particular students and groups of students for whom the planned activities did and did not work, and plans remediation as needed.

*Examples of Indicators of **Expert** Teacher Competence*

- Analyzes the effectiveness of plans and identifies elements which need to be adapted.
- Adapts plans in the middle of a lesson to capitalize on unexpected opportunities or to address unexpected problems.

**Domain: Organising and Managing the Classroom to Create a
Positive Learning Environment**

This set of skills is less dependent on experience with particular topics and students than other sets of skills, e.g., planning and evaluation skills. Therefore, a higher degree of effectiveness in this domain can be expected of a beginning teacher than in other domains. One cautionary note is that the difficulty of classroom organization and management is strongly affected by the complexity of instructional activities. Since more complex instructional activities are frequently required to develop higher-order thinking skills, beginning teachers should neither be penalized for reasonable attempts at more complex forms of instruction nor rewarded for achieving classroom management by avoiding more complex activities.

DOMAIN: ORGANIZING AND MANAGING THE CLASSROOM

Subdomain: Managing student behavior

This skill focuses on the ability to encourage and reinforce appropriate student conduct, and to maximize the productive engagement of diverse students in a variety of learning activities. The indicators of competence for this construct go beyond the effective control of student behavior to minimize classroom disruptions to include proactive strategies to encourage positive behaviors, e.g., completing homework assignments.

*Examples of Indicators of **Beginning** Teacher Competence*

- Makes explicit to the students what is expected of them in different classroom situations, i.e., establish rules.
- Considers alternative explanations of student behavior and uses strategies to reinforce positive student behavior and alter negative behavior.
- Takes responsibility for the use of strategies to alter negative student behavior, i.e., does not conclude that student behaviors are unchangeable.
- Recognizes cultural differences between the teacher and students in terms of behavior norms.
- Determines whether or not a particular strategy to affect student behavior is working.
- Monitors student behavior while teaching.

*Examples of Indicators of **Expert** Teacher Competence*

- Actively involves students in the development and/or elaboration of classroom rules.
- Uses multiple perspectives (e.g., cognition, developmental psychology, curriculum theory, cultural norms, abnormal psychology) to diagnose problems in student behavior and considers solutions, including the possibility of culture-specific responses, to different management approaches.
- Manages student behavior in the classroom in culturally sensitive ways, to minimize distractions and to promote learning and prosocial behavior.
- Monitors student behavior during a lesson and responds quickly to students to encourage positive behavior and discourage negative behavior.

DOMAIN: ORGANIZING AND MANAGING THE CLASSROOM

Subdomain: Organizing the classroom

This skill addresses both the physical and the social organization of the classroom. The classroom should be physically organized both for safety and to facilitate anticipated movement of students as they move into and out of the classroom and regroup within the classroom. If under the teacher's control, the visual environment should reflect and reinforce instructional activities and, especially at the elementary level, contribute to a student's sense of belonging in a classroom. A teacher should establish routines to minimize the time spent in recurrent tasks and transitions between tasks. The grouping patterns used should be appropriate for achieving the goals of the lesson.

*Examples of Indicators of **Beginning** Teacher Competence*

- Creates a safe environment that is physically arranged to facilitate learning and routines for recurrent tasks.
- Modifies the visual and physical environment to correspond with the learning activity and lesson content.
- Establishes routines and procedures for activities such as entering class, leaving class, collecting homework, regrouping for different activities, boardwork, distributing materials, taking attendance, etc.

*Examples of Indicators of **Expert** Teacher Competence*

- Structures the physical/interpersonal environment (e.g., arrangement of desks and chairs, use of cooperative groups) as a means of communicating content and process.
- Establishes efficient routines to accomplish recurrent tasks and transitions between activities.

DOMAIN: ORGANIZING AND MANAGING THE CLASSROOM

Subdomain: Establishing a rapport and relationship with students and between students

This construct addresses the establishment and maintenance of a positive climate for learning within the classroom. Compared with other constructs, fewer differences between beginning and expert teachers are expected, as the skills involved are basic interpersonal ones which might have been previously developed in other settings.

*Examples of indicators of competence in both **beginning** and **expert** teachers:*

- Establishes rapport with all students by demonstrating patience, acceptance, empathy and interest in students through positive verbal and non-verbal exchanges.
- Avoids sarcasm, disparaging remarks, sexist or racial comments, scapegoating or physical abuse.
- Exhibits his/her own enthusiasm for the content and for learning.
- Maintains a positive social and emotional tone in the learning environment.
- Establishes and maintains respectful and productive relationships with and between students.

DOMAIN: ORGANIZING AND MANAGING THE CLASSROOM

Subdomain: Actively involving students

The California Curriculum Frameworks emphasize the active involvement of students. Not all instruction lends itself to the active participation of students. For example, rote memorization and the communication of basic information such as definitions are more efficiently accomplished through other means. However, increasing the involvement of students in appropriate lesson activities (e.g., the application of knowledge in a range of ways) can improve student understanding and reduce discipline problems.

*Examples of Indicators of **Beginning** Teacher Competence*

- Monitors student engagement, identifies all students who are off task, and employs a strategy to reengage them in lesson activities.
- Includes lesson activities that require active participation by student(s).

*Examples of Indicators of **Expert** Teacher Competence*

- Actively involves all students in instructional activities.
- Maximizes use of lesson activities that require active participation by students.

DOMAIN: ORGANIZING AND MANAGING THE CLASSROOM

Subdomain: Fostering independent learning

Teaching not only includes effectively communicating specific content and processes, but also guiding students so that they reach a point where they can make sound decisions and judgments independently. Beginning teacher and expert teacher skills in this area are distinguished more by extent of repertoire, facility of application, and successful anticipation of student difficulties than by differences in types of skills.

*Examples of indicators of competence for both **beginning** and **expert** teachers:*

- Helps students to become more independent by providing structured opportunities for learners to create their own perspectives, e.g., testing hypotheses or searching for support for opinions or exploring media for expression, and by providing other perspectives against which learners can test their knowledge.
- Increases the students' capacities to learn from each other.

Domain: Delivering Instruction to All Students

Teachers gradually build up a repertoire of instructional strategies, based on previous knowledge and experience. The complexity of instruction needed varies with the heterogeneity of, and the degree of challenge posed by, the students' learning characteristics. Beginning teachers require time and, perhaps, assistance to acquire the skills to appropriately implement complex instruction or instruct challenging students. Ideally, beginning teachers would receive less challenging assignments to solidify their basic instructional skills before moving on to more complex challenges. The challenge of the teaching assignment should be taken into account both when evaluating a teacher and when determining the amount of support a beginning teacher should receive.

DOMAIN: DELIVERING INSTRUCTION TO ALL STUDENTS

Subdomain: *Communicating effectively*

The effective teaching of students requires successful communication between the teacher and student. Students must not only understand the concepts, principles, and procedures which are the focus of the lesson, but must also understand any instructions given by the teacher and must know how to participate in recurrent classroom routines (e.g., taking attendance, sharpening pencils, volunteering answers to teacher questions.)

Communication is not often a simple task in California classrooms which are frequently composed of students from a variety of cultural backgrounds who exhibit varying degrees of proficiency in English. Beginning teachers faced with these multicultural classrooms can be expected to exhibit efforts at successful communication with students and analysis of whether or not their efforts were successful, but most will require time and reflection to anticipate the most appropriate communication strategies with respect to specific students or classrooms.

Examples of Indicators of Beginning Teacher Competence

- Employs strategies to communicate effectively with all students, paying particular attention to students of varying cultural and linguistic backgrounds.
- Recognizes cultural and grade-level specific differences in communication norms and preferred styles.
- Makes an effort to ensure that directions for instructional activities and classroom routines are clear and understood by all students.
- Recognizes when students have not understood directions or presentations of information and makes modifications to clarify.

Examples of Indicators of Expert Teacher Competence

- Communicates effectively with all students, including students of varying cultural and linguistic backgrounds.
- Communicates with students in ways that show recognition of and sensitivity to cultural and grade-level differences.
- Ensures that directions for instructional activities and classroom routines are clear and understood by all students, including sensitivity to linguistic differences as well as to cultural norms governing adult-child interactions and patterns of communication.
- Creates presentations marked by clarity of concepts and directions, accuracy of information, alternative information and adaptation to audience.

Examples of Indicators of Beginning Teacher Competence (cont'd)

- Presents information in a way that engages and motivates students.
- Communicates clear expectations to students.
- Uses more than one method of communication (e.g., visual, oral).
- Communicates content information accurately.
- Communicates in writing in a professional manner in and out of the classroom.
- Reaches out to students in nonverbal ways (e.g., moves around the classroom, pays attention when students speak).

Examples of Indicators of Expert Teacher Competence (cont'd)

- Draws upon an extensive repertoire of activities that have proven to be successful in engaging and motivating students.
- Capitalizes upon opportunities to make appropriate links to both previous instruction and to other subject areas.
- Draws upon an extensive repertoire of nonverbal ways of communicating with students.

DOMAIN: DELIVERING INSTRUCTION TO ALL STUDENTS

Subdomain: **Motivating students**

This construct addresses the need to establish and maintain the interest and involvement of each student in productive learning activities, and to inspire students to produce their best work in the content area(s) taught. In particular, students experiencing difficulty -- either because they find the usual curriculum too easy or too difficult -- need realistic challenges and indicators of progress.

*Examples of Indicators of **Beginning** Teacher Competence*

- Fosters positive student attitudes toward learning in general.
- Shows respect for varied student perspectives.
- Communicates appropriately high expectations for the class as a whole and for individual students.

*Examples of Indicators of **Expert** Teacher Competence*

- Fosters positive student attitudes toward the subject learned and towards themselves as learners.
- Anticipates possible student responses to instruction stemming from varied perspectives, and draws upon a repertoire of possibilities for sensitively utilizing these perspectives in further instruction.
- Uses instructional materials and activities which are both meaningful and appealing to students.

DOMAIN: DELIVERING INSTRUCTION TO ALL STUDENTS

Subdomain: Using subject-specific instructional techniques

Subject areas differ in structure, and appropriate instructional techniques differ accordingly. Selection of techniques appropriate for a particular topic depends on the knowledge of the structure of the content area, knowledge of common student errors with respect to the topic being taught, and knowledge of appropriate methods of inducing the relevant thinking skills.

*Examples of Indicators of **Beginning** Teacher Competence*

- Presents content accurately.
- Presents content in a way that is meaningful and comprehensible to students.
- Designs multiple ways of communicating concepts or procedures, including ways appropriate for students with varying levels of proficiency in English.
- Improves the ability of each student to evaluate information, think analytically, synthesize information, and reach sound conclusions within the content area(s) taught at the appropriate developmental level for the grade level taught.
- Recognizes fundamental differences in structure and decision-making methodology between the content areas (for elementary teachers).

*Examples of Indicators of **Expert** Teacher Competence*

- Draws upon an extensive repertoire of representations and methods of presentation of content.
- Responds to student questions in ways that either extend or tie into the current lesson.
- Uses different techniques for instruction and evaluation which reflect differences between the content areas.

DOMAIN: DELIVERING INSTRUCTION TO ALL STUDENTS

Subdomain: Responding to individual differences

Students differ in many ways, including preferred learning style, cultural norms for participation, previous achievement, proficiency in English, and tolerance for inactivity. To respond to individual differences, teachers cannot depend on a single teaching strategy, but must vary activities and methods of communicating (e.g., visual, tactile, oral). Differences between beginning and experienced teachers with respect to this construct are likely to be large. The repertoire of beginning teachers is limited, compared with that of expert teachers, and master teachers will be able to draw upon their experience to tailor their instruction to both individual students and classrooms.

Examples of Indicators of Beginning Teacher Competence

- Uses more than one instructional method to meet various learning modalities.
- Recognizes individual and cultural differences that might require different instructional strategies, and attempts to use strategies to address these differences.
- Knows important dimensions on which individuals and cultures differ which affect the school experience (e.g., gender, verbal and nonverbal communication patterns, linguistic ability, cultural and community expectations about the role of education), and uses strategies to fill in gaps of knowledge about students.

Examples of Indicators of Expert Teacher Competence

- Develops a variety of activities and uses varied media to respond to the diversity of learners in the classroom.
- Stimulates bicultural abilities in students from different cultural groups so they can operate in both their culture and the dominant culture.
- Exposes students from the dominant culture to differences in cultural norms.

***Examples of Indicators of Beginning
Teacher Competence (cont'd)***

- Reflects upon and develops tentative generalizations from particular experiences with students.
- Identifies students who are not responding to instruction, and modifies instruction or tries an alternative approach.

***Examples of Indicators of Expert
Teacher Competence (cont'd)***

- Extends the experience with and knowledge of students previously taught to the instruction of other types of students (e.g., varying ages, cultures, linguistic competence, and socioeconomic backgrounds), identifying both commonalities and differences among types of students and limitations to the generalizations previously developed.

Domain: Diagnosing and Evaluating Student Learning

Diagnosing and evaluating student learning is a set of challenging skills, which requires familiarity not only with a repertoire of evaluation strategies but also with typical student error patterns. Thus this set of skills is one which requires a longer period of experience to master, so substantial differences between the skills of beginning and expert teachers can be expected.

DOMAIN: DIAGNOSING AND EVALUATING STUDENT LEARNING

Subdomain: *Monitoring and adjusting instruction*

This construct refers to the process of obtaining and interpreting information during a lesson which reflects whether or not students are succeeding in the instructional activities. This process depends on knowledge of the structure of a content area and knowledge of any hierarchical organization of concepts within that area. Lessons in some content areas, e.g., mathematics, often consist of sequenced instruction where success in later stages depends on successful mastery of concepts presented earlier. For these content areas, mastery of certain key concepts is often critical to success in the next lesson. Other content areas, e.g., English/language arts, are not so hierarchically organized, perhaps providing more latitude but less structure for beginning teachers in the development of monitoring processes. Expert teachers, compared with beginning teachers, can be expected to monitor and adjust instruction with greater ease and more attention to subtle cues.

Examples of Indicators of Beginning Teacher Competence

- Uses at least one method of monitoring student progress during a lesson.
- Uses at least one method of identifying prior student knowledge with respect to the concepts taught.
- When reflecting on a lesson, distinguishes between times when the students were achieving learning objectives and times when they weren't, whether because of behavior problems or because of problems in instruction (without necessarily being able to distinguish between the two as a source of the problem).

Examples of Indicators of Expert Teacher Competence

- Uses multiple methods of monitoring student progress during a lesson.
- Identifies students' current state of knowledge with respect to the concepts or skills to be taught, using student misconceptions to adapt instruction.
- Uses a repertoire of strategies to identify sources of low student performance which differentiate between misunderstanding of instructions, inability to communicate knowledge (e.g., through lack of writing skills or facility in English), and lack of knowledge.

Examples of Indicators of Beginning Teacher Competence (cont'd)

- Identifies major potential areas of concern in implementing a lesson (e.g., student behavior, instructional design, clarity of directions, materials), and in reflecting on a lesson that went poorly, considers each as a potential source of problems.
- Recognizes student problems that are beyond the beginning teacher's current capacity to solve, which require advice from and/or referral to a resource specialist.

Examples of Indicators of Expert Teacher Competence (cont'd)

- Monitors student progress and adjusts instruction appropriately, both for individuals and for the class as a whole.
- Identifies problems in student learning whose solution can benefit from referrals to resource specialists.

DOMAIN: DIAGNOSING AND EVALUATING STUDENT LEARNING

Subdomain: Using a repertoire of evaluation strategies

A repertoire of evaluation strategies consists of a variety of methods to obtain and interpret information about the initial and changing attainments of each student. This skill includes knowledge of the limitations of information obtained by a particular method, and the ability to make assessment-based instructional decisions. Like other constructs in this subdomain, large differences between beginning and expert teachers can be expected. Beginning teachers will possess only a limited repertoire of strategies, and will generally lack the experience with common student errors necessary to choose the most effective and efficient evaluation strategies.

Examples of Indicators of Beginning Teacher Competence

- Demonstrates more than one method or strategy to assess student understanding, including informal methods such as journals or anecdotal records.
- Designs and selects assessment instruments appropriate to the learning outcomes being measured, at an elementary level of competence.

Examples of Indicators of Expert Teacher Competence

- Demonstrates more than one method or strategy to assess the understanding of ESL students whose competence may not be accurately reflected on traditional assessment instruments.
- Possesses a repertoire of evaluation strategies and knows the limitations of the validity of inferences drawn from each strategy.
- Uses evaluation results to inform the choice of appropriate methods of remediation and enrichment.

DOMAIN: DIAGNOSING AND EVALUATING STUDENT LEARNING

Subdomain: Communicating student progress

An important skill in evaluating student progress is the ability to accurately communicate that progress to the student, parents, and other teachers.

*Examples of Indicators of **Beginning** Teacher Competence*

- Uses and is able to articulate a reasonable strategy for communicating progress to students, parents, and others working with the students.

*Examples of Indicators of **Expert** Teacher Competence*

- Effectively communicates student progress to the students, their parents, and others working with the students

Domain: Participating in or Creating a Learning Community

The difficulty in acquiring this set of skills is affected by the degree of collegial structures and community interface already in place in the school, district, and community where a teacher works. Beginning teachers with opportunities to participate in well-structured activities and networks are more likely to develop these skills than beginning teachers working at sites where collegiality is difficult.

DOMAIN: PARTICIPATING IN OR CREATING A LEARNING COMMUNITY

Subdomain: Working with others both in and outside the school

This construct recognizes that teachers can significantly enhance their effectiveness when they do not work in isolation, but cooperate with and draw upon the knowledge and skills of others, both within and outside the school. Beginning teachers are rarely able to draw upon established relationships, and usually are inexperienced at utilizing parents, educational specialists, and community experts as resources for instruction. Therefore, competence for beginning teachers in this area takes the form of identifying potential resources and understanding when they might be useful. District resources will typically be most readily available to beginning teachers. Beginning teachers may require more time to become familiar with potential assistance to be contributed by parents and the greater community.

Examples of Indicators of Beginning Teacher Competence

- Recognizes when to go to outside personnel for help with an individual student.
- Links up with other teachers to form a resource network for mutual assistance and problem solving. For some teachers, this will mean integrating into existing activities at the school. For others, this will mean creating a personal network and possibly creating school activities or projects.
- Understands the structure and organization of the school system, to identify available resources and appropriate procedures for seeking assistance and for accomplishing goals.

Examples of Indicators of Expert Teacher Competence

- Knows how information about specific children is provided to and solicited from resource and community specialists.
- Works with other teachers at the school to create a structured learning environment that responds to the needs of the particular students who attend the school.
- Collaborates with school, district, county, regional, and state resource teachers to share information and ideas to more effectively instruct students.
- Knows what others have done and are doing in previous classes and concurrent classes.
- Utilizes parents and families as a resource for students.
- Utilizes community resources to enrich the learning environment.

DOMAIN: PARTICIPATING IN OR CREATING A LEARNING COMMUNITY

Subdomain: Participating in professional development activities

Teaching is a complex activity, where even master teachers cannot always accurately anticipate the effects of their actions. However, tremendous progress in understanding teaching has been made in recent years, so that a teacher's accuracy can be significantly improved by thoughtful reflection on research and the experience of others. In addition, participation in professional development activities helps a teacher stay current with curricular changes and reforms.

*Examples of Indicators of **Beginning** Teacher Competence*

- Articulates goals for continued learning.

*Examples of Indicators of **Expert** Teacher Competence*

- Keeps abreast of important developments in understanding of the age group, subject-matter specialty and/or grade level.

BIBLIOGRAPHY

Barnes, Carol P. (n.d.) **The profile of the beginning teacher.** Report of the CSU Committee to Study the Teacher Preparation Curriculum, the California State University.

Borko, Hilda and Carol Livingston (1989). *Cognition and improvisation: Differences in mathematics instruction by expert and novice teachers.* **American Educational Research Journal** 26: 473-498. (No. 4; Winter).

Commission on Teacher Credentialing (1991). **Draft standards of program quality and effectiveness, factors to consider and preconditions in the evaluation of professional teacher preparation programs for multiple subject credentials with an emphasis in early childhood education.**

Commission on Teacher Credentialing (1990). **Standards of program quality and effectiveness, factors to consider and preconditions in the evaluation of professional teacher preparation programs for multiple and single subject credentials.**

Commission on Teacher Credentialing (1990). **Standards of program quality and effectiveness, factors to consider and preconditions in the evaluation of professional teacher preparation programs for multiple and single subject credentials with a bilingual crosscultural emphasis.**

Commission on Teacher Credentialing (1989). **Standards of program quality and effectiveness, factors to consider and preconditions in the evaluation of professional teacher preparation programs for multiple and single subject credentials with an emphasis on middle level preparation.**

Connecticut State Department of Education (1989). **The Connecticut competency instrument.**

Diez, Mary and Peter Murrell (1991). **Assessing abilities of expert teaching practice in diverse classrooms.** A paper presented at the annual meeting of the American Educational Research Association, Boston, MA.

Education Department, Alverno College (n.d.) *Model of the development of teacher abilities.* (The first "map" only appears in Diez, Mary (1988/1990). *A thrust from within: Reconceptualizing teacher education at Alverno College.* **Peabody Journal of Education.** Volume 65, No. 2.

Feiman-Nemser, Sharon, and Margaret Buchmann (1989). *Describing teacher education: A framework and illustrative findings from a longitudinal study of six students.* **The Elementary School Journal** 89: 365-377 (No. 3, January)

Grossman, Pam, Suzanne Wilson, and Lee Shulman (1989). *Teachers of substance: Subject matter knowledge for teaching in Reynolds, Maynard C. (ed.), Knowledge base for the beginning teacher, pp. 23-36.* New York: Pergamon Press.

Hill, Flo, Amelia Lee, and Glenda Lofton (1991). **Assessing the relationship between reflective practice, content knowledge, and teaching effectiveness of student teachers.** AERA paper, Chicago IL (April).

McDiarmid, G. Williamson, Deborah Ball, and Charles Anderson (1989). *Why staying one chapter ahead doesn't really work: Subject-specific pedagogy* in Reynolds, Maynard C. (ed.), **Knowledge base for the beginning teacher**, pp. 193-206. New York: Pergamon Press.

McDiarmid, G. Williamson and Suzanne Wilson (1991). *An exploration of the subject matter knowledge of alternate route teachers: Can we assume they know their subject?* **Journal of Teacher Education** 42: 93-103, No.2 (March-April).

National Board for Professional Teaching Standards. (1989). **Toward High and Rigorous Standards for the Teaching Profession.** Detroit: National Board for Professional Teaching Standards.

National Council of Teachers of Mathematics. (March, 1991). **Professional standards for teaching mathematics.** Reston, VA: NCTM.

Reynolds, Maynard C. (ed.) (1989). **Knowledge base for the beginning teacher.** New York: Pergamon Press.

Texas Education Agency and National Evaluation System, Inc. (1991). **Preparation and registration manual, 1990-01, Texas master teacher examination.** Austin, TX: Texas Education Agency.

Villegas, Ana Maria (1990). **Culturally responsive pedagogy for the 1990's and beyond.** Princeton, NJ: Educational Testing Service.